



IMPORTANT! READ THIS FIRST!

Installation of shock absorbers or other suspension components requires special tools and expert knowledge. Accordingly, installation of all BILSTEIN products must be performed by a professional automotive suspension technician.

When replacing other brands, BILSTEIN shock absorbers or other suspension components should always be installed as a set. All BILSTEIN products must only be used for the specific, intended application as indicated in the application guide. **Any use of any BILSTEIN product other than for its intended use may result in serious bodily injury or death.**

Always use a chassis hoist for the installation of BILSTEIN products and make certain that the raised vehicle is securely attached to the hoist and/or supported to prevent the vehicle from slipping, falling, or moving during the installation process.

If you install any BILSTEIN product without the necessary special tools, expertise, and chassis hoist, you may subject yourself to the risk of serious bodily injury or death.

BILSTEIN shock absorbers are gas-filled and are highly pressurized.

- Never place any BILSTEIN shock absorbers in a vise or use a clamp on any BILSTEIN shock absorber.
- Never apply heat near any BILSTEIN shock absorber.
- Never attempt to open or repair any BILSTEIN product, in order to prevent **serious bodily injury or death.**

Any attempt to misuse, misapply, modify, or tamper with any BILSTEIN suspension product voids any warranty and **may result in serious bodily injury or death.**

While installing any BILSTEIN product:

- Do not use impact tools for loosening or tightening fasteners, because this may destroy the screw threads.
- Self-locking fasteners must only be used **once!**
- Reuse original equipment components only if they are in good condition, otherwise replace them with new components.
- Never remove the slight film of oil on the shock absorber piston rod and seal.
- All mounting fasteners for shock absorbers and other suspension components must be securely tightened before tension is placed on the suspension system, unless otherwise specified in the manufacturer's service manual or in this instruction.

After installing any BILSTEIN product:

- The suspension caster and camber must be checked and/or adjusted to comply with the vehicle manufacturer's specifications.
- The (load dependent) brake compensator and the anti-lock brake system must be checked and/or reset to comply with the vehicle manufacturer's specifications.
- The headlight aim must be checked and adjusted. Or, if applicable, adaptive headlights must be checked and recalibrated to comply with the vehicle manufacturer's specifications.
- If applicable, any/all Advanced Driver Assistance Systems (ADAS) must be checked and recalibrated to comply with the vehicle manufacturer's specifications.

CAUTION for COILOVER TYPE SUSPENSIONS!!!

If disassembling a coilover type suspension, refer to the vehicle manufacturer's service manual for proper procedures. The coil spring is preloaded and must be compressed with a spring compressor to release load before the upper mount is disassembled. Failure to follow the vehicle manufacturer's procedures may cause serious injury or death, and may damage the vehicle.

IMPORTANT!!!

This BILSTEIN product may or may not be compatible with non-BILSTEIN aftermarket products and/or vehicle modifications. It is the responsibility of the professional automotive suspension technician performing the installation to identify any non-OEM components and/or modifications on the vehicle that may interact with the suspension system. These must be evaluated for any potential physical static or dynamic interference with and/or effect on the function of this BILSTEIN product.

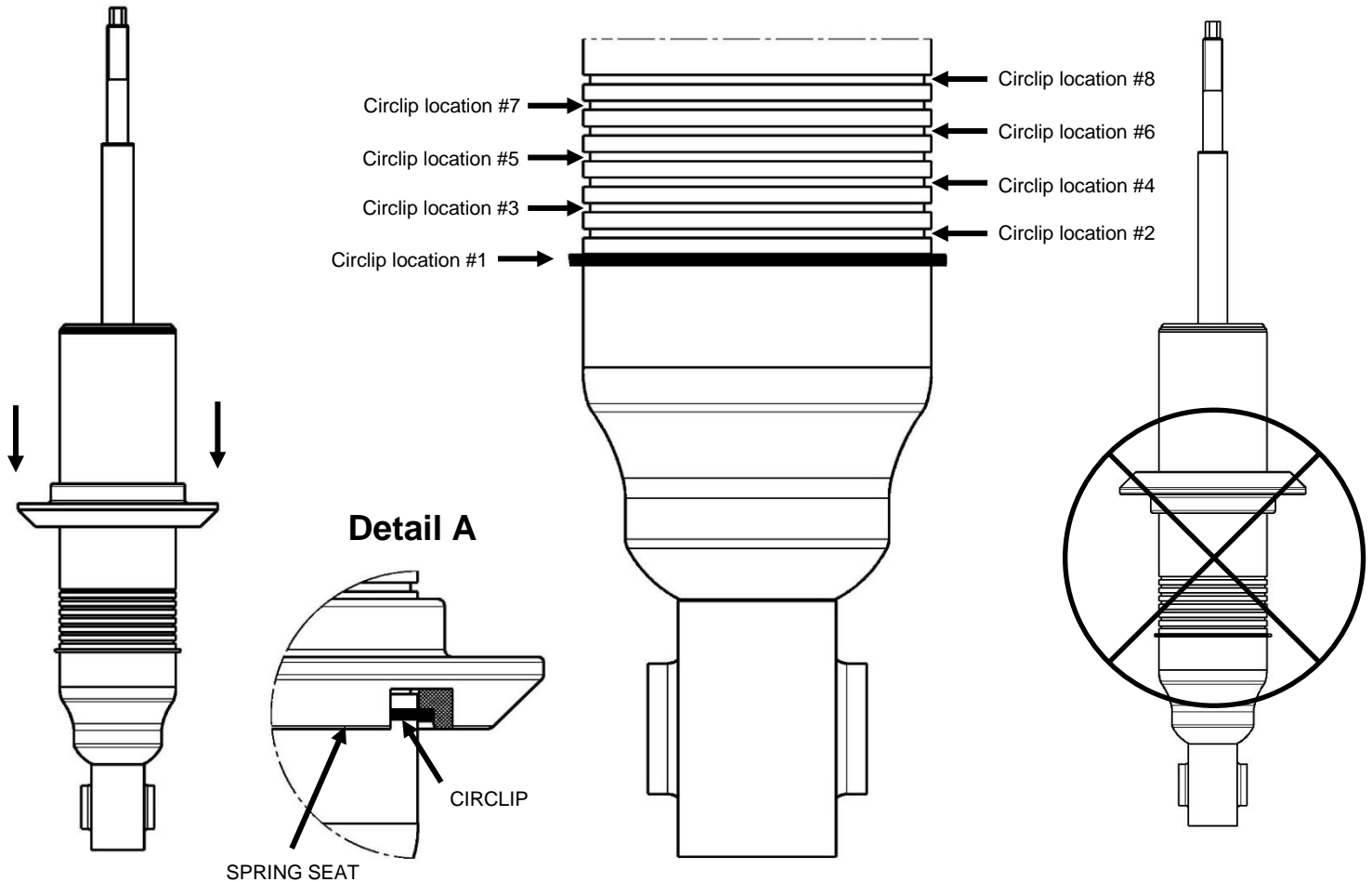
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IMPORTANT:

PLACE CIRCLIP IN APPROPRIATE GROOVE TO ADJUST RIDE HEIGHT.

Use appropriate tools to move the circlip. Ensure that the circlip is fully seated in the groove after moving it (you should be able to rotate it manually in the groove). Install the spring seat in the direction shown only. The circlip must fit completely in the groove inside the spring seat (DETAIL A). **Improper installation will cause permanent damage to the shock!**



B8 6112 Typical Lift Heights**					
Circlip Location	Frontier 4WD V6 Crew Cab '05-'21 & '22+	Frontier 4WD V6 King Cab '05-'21	Frontier RWD V6 Crew Cab '22+	Frontier RWD V6 Crew/King Cab '05-'21	Xterra 4WD V6 '05-'15
#8	2.0"	Do not use	Do not use	Do not use	2.0"
#7	1.8"	2.0"	Do not use	Do not use	1.8"
#6	1.5"	1.8"	2.4"	Do not use	1.6"
#5	1.3"	1.5"	2.1"	Do not use	1.3"
#4	1.0"	1.2"	1.8"	2.3"	1"
#3	Do not use	Do not use	1.5"	2"	Do not use
#2	Do not use	Do not use	1.1"	1.7"	Do not use
#1	Do not use	Do not use	0.8"	1.4"	Do not use

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** Lift heights indicated are typical. Actual lift height is influenced by which factory suspension the vehicle is equipped with and its condition; optional equipment and accessories on your vehicle, and other vehicle modifications such as replacement coil springs, wheel and tire combinations, etc.

Modifying/lifting the suspension to your vehicle may raise its center of gravity and may make it more susceptible to loss of control and/or rollover, which may result in death or serious injury. We strongly recommend that you offset the loss of rollover resistance as much as possible by increasing tire track width, and that you equip the vehicle with a functional roll bar and cage system. Wear seat belts and shoulder harnesses at all times and avoid situations where a side rollover may occur.

Instructions for disassembly of OE shock absorber module:

- A. Remove the existing shock and spring unit from the vehicle following all procedures in the vehicle manufacturer's service manual.
- B. Note the clocking of the lower mount bushing relative to the studs on the upper mount (important for reassembly).
- C. Using an appropriate spring compressor, compress the spring until it can be rotated freely by hand. Then, disassemble the shock and spring unit.
- D. Inspect OE parts to be reused and replace with new parts if they show significant signs of wear.

Instructions for installation of BILSTEIN bump stop spacer:

- E. Before installation of the BILSTEIN shock absorber module, find the OE bump stop located on the lower control arm and the accompanying nut below (see Figure 1). Remove both the nut and bump stop.

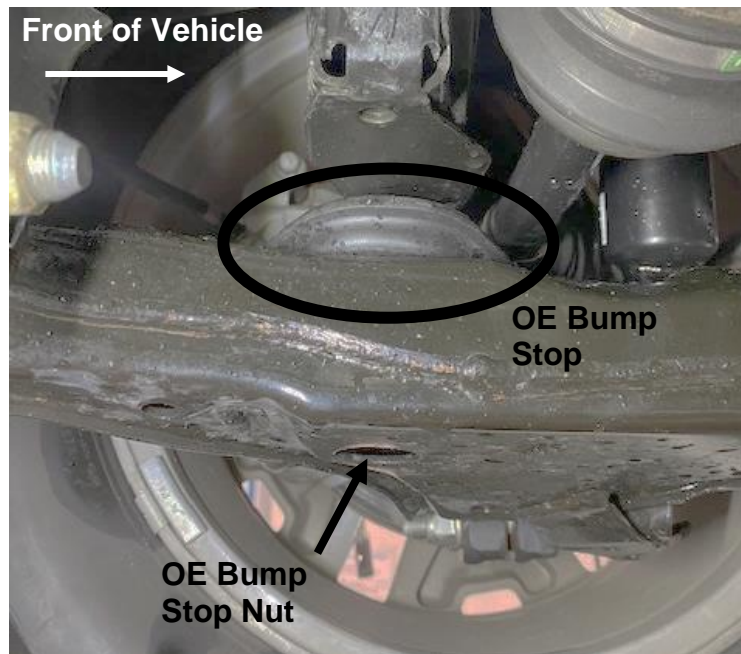


Figure 1: Driver's Side Bump Stop

- F. Place the Bilstein bump stop spacer on the lower control arm in the same position as the bump stop. Ensure the bump on the control arm fits into the dimple on the spacer as to prevent rotation. Place the bump stop on top of the spacer again ensuring the spacer bump fits into the corresponding bump stop dimple (see Figure 2).



Figure 2: Bump Stop with Installed Spacer

- G. Replace the bump stop nut and tighten to the vehicle manufacturer's specifications.
- H. Repeat steps A-G for the opposite side of the vehicle.

Instructions for assembly of B8 6112 shock absorber module:

- I. Select desired lift height by seating the circlip in the appropriate circlip location (see page 2).

[Refer to Figure 3 on page 5 for steps J-R]

- J. Install the supplied spring seat onto the shock body as shown. Ensure that the groove inside the spring seat fits over the circlip on the shock body (see DETAIL A on page 2). Improper installation will cause permanent damage to the shock.
- K. Install the supplied lower washer (concave side up) onto the stem of the rod as shown.
- L. Install the supplied sleeve onto the stem of the rod as shown.
- M. Using an appropriate spring compressor, compress the supplied coil spring enough to safely assemble it with the new Bilstein shock.
- N. Place the OE upper mount (top mount plate and spring isolator) onto the top of the spring and install the Bilstein unit into the spring up through the center of the OE upper mount.
- O. Install the supplied upper bushing onto the stem of the rod as shown.
- P. Install supplied upper washer onto the stem of the rod as shown.
- Q. Install the provided new locknut and tighten to 41 N·m (30 lb·ft). Use an 8mm wrench to prevent the piston rod from rotating while torquing the locknut.
******DO NOT USE AN IMPACT WRENCH TO TIGHTEN THE LOCKNUT! ******
- R. Rotate the shock so that the lower mount is aligned with the upper mount studs as noted in step B.
- S. Slowly release the spring compressor while ensuring that the lower shock mount remains aligned with the upper mount studs.
- T. Install the module assembly onto the vehicle and tighten all fasteners to vehicle manufacturer's specifications.
- U. Check wheel alignment. If necessary, adjust to the vehicle manufacturer's specifications. This completes the installation.

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